Understanding Consumer Responses to Virtual Reality Fashion Shows Through the S-O-R Framework

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Introduction: Virtual reality fashion shows (VRFSs) have expanded rapidly as brands adopt immersive technologies to extend runway experiences beyond physical venues (Jung et al., 2021). Advances in 360-degree video and head-mounted displays allow viewers to explore virtual runways with heightened presence, often generating stronger impressions than traditional formats (Ahn & Bae, 2020). These immersive qualities support core industry goals—reinforcing brand identity and stimulating word-of-mouth—especially among younger consumers who respond strongly to interactive media (Robaina-Calderín et al., 2023). Yet VRFSs also evoke mixed emotions: some viewers feel enjoyment, while others experience discomfort or fear due to sensory intensity (Jung et al., 2021). Because digital fashion studies have emphasized cognitive outcomes, less is known about how emotional reactions vary in high-immersion settings or how individual differences shape these responses. Sensation seeking—a preference for novel and intense stimulation—may be especially influential (Zuckerman, 1979). This study applies the Stimulus–Organism–Response (S-O-R) framework to examine how telepresence, parasocial interaction, and interactivity influence perceived enjoyment and fear (Oh et al., 2018), and how these emotions shape attitudes, word-of-mouth, and brand engagement, with sensation seeking tested as a moderator.
Literature: Within the S–O–R framework, VRFSs rely on three perceptual stimuli—telepresence, parasocial interaction, and interactivity—to shape emotional and attitudinal responses. Telepresence, the subjective feeling of being inside a mediated environment (Steuer, 1992), is fostered in VRFS through immersive 360-degree visuals and spatial audio. Parasocial interaction, rooted in perceived relational connection with mediated figures (Horton & Wohl, 1956), emerges when virtual models signal awareness through gaze, proximity, or individualized movement. Interactivity, defined as user control and system responsiveness (Cyr et al., 2009), appears as viewers adjust viewpoints and navigate the scene through natural head or body movements. Together, these cues form the experiential basis of VRFS and offer a foundation for understanding how immersive features evoke enjoyment and fear, shape attitudes, and drive downstream behaviors such as word-of-mouth and brand engagement. Building on these definitions, the research framework summarizes these relationships and incorporates sensation seeking as a moderator (see Figure 1).
Method: In this study, participants viewed an exclusive VRFS and then completed an online survey. A convenience sample of 201 valid cases was obtained from adults aged 18–45 who experienced the Prada 2022 Spring/Summer women's VRFS via Meta Quest 2 headsets in a controlled indoor setting and then answered a Qualtrics

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questionnaire. All constructions were measured using established multi-item scales on seven-point Likert formats; prior VRFS viewing with a headset was included as a control variable. Following the two-step approach to structural equation modeling (Anderson & Gerbing, 1988), a confirmatory factor analysis was first conducted to assess the measurement model. Five low-loading items were removed, and the final CFA showed acceptable fit ($\chi^2/df = 2.472$, CFI = .902, TLI = .890, NFI = .847, RMSEA = .086), with all remaining items loading above .60 and each construct demonstrating satisfactory reliability and convergent and discriminant validity. The structural model was then estimated using SEM in AMOS with maximum likelihood, yielding adequate fit ($\chi^2/df = 2.425$, GFI = .765, CFI = .905, NFI = .849, TLI = .893, RMSEA = .084) for testing the direct paths from VRFS features to emotions, from emotions to attitude, and from attitude to word-of-mouth and brand engagement. Moderation by sensation seeking was examined through multi-group SEM by comparing structural paths between low and high sensation-seeking groups created via median split.

Findings and Discussion: Among the three VRFS features, only telepresence significantly increased perceived enjoyment ($\beta = 1.025$, $p < .01$), confirming that a strong sense of "being there" is the primary emotional engine in exclusive VR fashion shows. Perceived enjoyment, in turn, had a robust positive effect on attitude toward the VRFS ($\beta = .846$, $p < .001$), and attitude strongly predicted both word-of-mouth intention ($\beta = .965$, $p < .001$) and brand engagement ($\beta = .797$, $p < .001$), establishing attitude as the key conduit through which immersive experiences translate into post-experience behaviors. By contrast, telepresence did not significantly affect perceived fear, and parasocial interaction and interactivity did not significantly predict either enjoyment or fear, suggesting that brief, non-narrative VR fashion content may not provide enough time, feedback, or character depth for social cues and low-level viewpoint control to reshape emotions in a reliable way. Fear itself also did not directly influence attitude, indicating that in aesthetic, non-threatening VR contexts, mild discomfort or unease is overshadowed by positive hedonic reactions when consumers evaluate the overall experience. Multi-group SEM further revealed that sensation seeking moderates several of these relationships. For low sensation seekers, higher telepresence and stronger perceived interactivity tended to amplify both enjoyment and fear, implying that being deeply "inside" the show and actively moving within the scene can feel simultaneously exciting and overwhelming. For high sensation seekers, telepresence and interactivity were less decisive, but once enjoyment was felt, it translated even more strongly into favorable attitudes. Together, these findings refine the application of the S–O–R framework to solitary VR fashion consumption by showing that presence-driven enjoyment, rather than social cues or simple interactivity, is the dominant pathway to WOM and brand engagement, and that personality-based differences in stimulation needs meaningfully shape how consumers emotionally process and evaluate VRFS experiences.

Conclusion and Implications: This study shows that among VRFS features, only telepresence consistently enhances enjoyment, which then shapes attitudes, word-of-mouth, and brand engagement, while sensation seeking meaningfully alters how users respond to immersive cues. The findings advance academic discussions by

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demonstrating that VRFS features exert uneven emotional influence, supporting the need for feature-level analysis and personality-informed models in immersive consumer research. Practically, brands should prioritize presence-enhancing design and adjust interactivity intensity to different sensation-seeking segments to maximize enjoyment and strengthen engagement outcomes.

Limitation and Future Research: This on-site, headset-based VR experiment improved ecological realism but produced a geographically concentrated, younger sample. Future work should adopt multi-site recruitment and include older age groups to improve generalizability. Beyond sensation seeking, traits such as technology anxiety or digital skill may further shape responses and should be examined with larger, more diverse samples. Behavioral outcomes were measured through intention only; future studies should incorporate behavioral metrics such as sharing behavior or purchase patterns. Finally, the model focused on three VRFS features—telepresence, parasocial interaction, and interactivity—while excluding other technological factors such as visual fidelity or latency. Expanding S–O–R models to include additional sensory and cognitive dimensions would provide a more complete understanding of consumer responses in immersive fashion environments.

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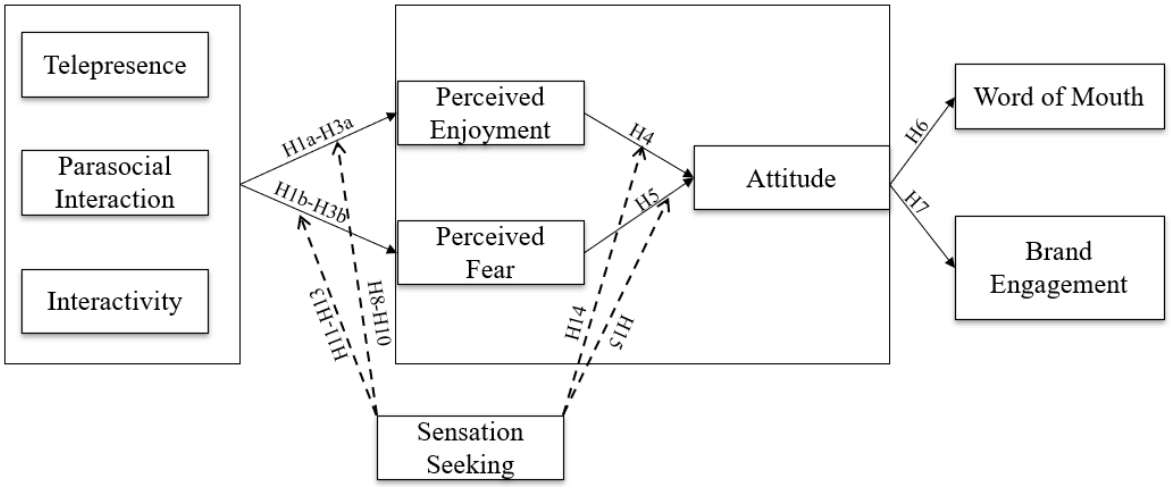

Figure 1. Conceptual framework for this study

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